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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,345	01/18/2002	Yuen Kai Fung	D6087D	9974

7590

02/08/2005

Dr. Benjamin Adler
Adler & Associates
8011 Candle Lane
Houston, TX 77071

EXAMINER

ZARA, JANE J

ART UNIT	PAPER NUMBER
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1635

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,345

Applicant(s)

FUNG ET AL.

Examiner

Jane Zara

Art Unit

1635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>NCBI search results</u> . |

DETAILED ACTION

This Office action is in response to the communication filed

Claims 4-7 and 11-13 are pending in the instant application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments and Amendments

Withdrawn Rejections

Any rejections not repeated in this Office action are hereby withdrawn.

Maintained Rejections

The specification is objected to under 35 USC § 112, first paragraph as failing to provide an enabling disclosure for the claimed invention for the same reasons of record set forth in the Office action mailed 5-6-04.

Claims 4-15 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Features and steps critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure for the same reasons of record set forth in the Office action mailed 5-6-04. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Applicant's arguments filed 11-12-04 have been fully considered but they are not persuasive. Applicants argue that the claimed invention is adequately described in the disclosure and therefore no deposit is required for the instantly claimed vectors. Contrary to Applicant's assertions, the vectors claimed comprise various and multiple promoters which are to drive the concerted

Art Unit: 1635

expression of the numerous and varied cassettes within the vectors, each of the cassettes in turn comprising many components including competing DNA-binding domains, leucine zipper domains, transactivation domains, IRES sequences, nuclear localization signals, antisense sequences and dominant negative sequences which are directed to corresponding sequences located at other parts of the vector. It would require undue experimentation beyond that taught in the instant disclosure to synthesize the vectors claimed whereby the promoters drive the concerted or orchestrated expression of all downstream components included in the vectors. Inadequate guidance is provided in the instant disclosure regarding the sequences comprising each of the promoters claimed that successfully drive the concerted expression of these various vector components, as well as the portions of the IRES and nuclear localization signals that together provide for functional expression vectors. Therefore vectors pRIBS-X and pRIPS-X are required material for the compositions claimed.

Claims 4-7 and 11-13 are rejected under 35 U.S.C. 112, first paragraph, because the specification, for the same reasons of record set forth in the Office action mailed 5-6-04. The claimed vectors comprise therapeutic genes and no in vivo enablement has been shown for these expression vectors in combination with any therapeutic gene. Therefore the enablement rejection is maintained.

New Rejections

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-7 and 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, line 6 (section (a)), it is unclear what amino acid sequence the parenthesized amino acid sequences 1-147 are referring to (e.g. since SEQ ID NO: 1 appears to adequately describe the nucleotide sequences, it seems unnecessary to list amino acid sequence numbers of an undisclosed amino acid SEQ ID NO).

In claim 4, line 7, it is unclear what is meant by the term "fused to" (e.g. indicating operable linkage between the various vector components would be remedial).

In claim 4, line 8 (section (a)), it is unclear what amino acid sequence the parenthesized amino acid sequences 8-112 of Max are referring to (e.g. since SEQ ID NO: 2 appears to adequately describe the nucleotide sequences, it seems unnecessary to list amino acid sequence numbers of an undisclosed amino acid SEQ ID NO).

In claim 4, line 14, it is unclear whether "Gal-DBD" consists of SEQ ID NO: 1, or more amino acids of the DNA-binding domain of yeast GAL4 protein (e.g. see lines 6-7 of claim 4).

Art Unit: 1635

In claim 4, line 8, the term “followed by” is vague (e.g. indicating operable linkage between the various vector components would be remedial).

In claim 4, lines 12-13, it is unclear whether the “sequence complementary to the Gal-DBD-mx sequence” is complementary to all or part of the Gal-DBD-mx sequence.

In claim 4, lines 17-19, it is unclear whether SEQ ID NO: 3 encodes Gal4 alone, or Gal4 in combination with the nuclear localization signal.

Generally in claim 4, it is unclear whether or not all of the component parts of the vector are operably linked.

In claim 4, lines 21-23, it is unclear whether or not SEQ ID NO: 5 encodes the helix loop helix leucine zipper domain of c-Myc and SV40 poly, or only the leucine zipper domain.

In claim 4, line 30, the term “gene X” is vague and unclear (e.g. replacing this with – a gene of interest—would be remedial).

In claim 4, lines 32-33, it is unclear whether the antisense TET-ON sequence is fully or partially complementary to SEQ ID NO: 8.

In claim 7, line 2, the term “gene X” is vague and unclear (e.g. replacing it with the term – gene of interest—would be remedial).

In claim 11, line 6, it is unclear what amino acid sequence the parenthesized amino acid sequences 1-147 are referring to (e.g. since SEQ ID NO: 1 appears to adequately describe the nucleotide sequences, it seems

Art Unit: 1635

unnecessary to list amino acid sequence numbers of an undisclosed amino acid SEQ ID NO).

In claim 11, line 6, there appears to be missing words (e.g. inserting —of the—before “DNA-binding” would be remedial).

Generally in claim 11, it is unclear whether or not all of the component parts of the vector are operably linked.

In claim 11, line 8, it is unclear what amino acid sequence the parenthesized amino acid sequences 8-112 of Max are referring to (e.g. since SEQ ID NO: 2 appears to adequately describe the nucleotide sequences, it seems unnecessary to list amino acid sequence numbers of an undisclosed amino acid SEQ ID NO).

In claim 11, line 8, the term “followed by” is vague (replacing this with — operably linked to—would be remedial).

In claim 11, lines 12-13, it is unclear whether the complementary sequence consists of all or a portion of Gal-DBD-mx.

In claim 11, line 14, it is unclear what sequence comprises the Gal-DBD (e.g. is this SEQ ID NO: 1?).

In claim 11, lines 21-23, it is unclear whether SEQ ID NO: 5 encodes the leucine zipper domain as well as SV40 polyA or only the leucine zipper domain.

In claim 11, line 30, the term “gene X” is vague and unclear (e.g. replacing this with — a gene of interest—would be remedial).

In claim 11, lines 32-34, it is unclear whether the TET-ON antisense is complementary to all or a portion of SEQ ID NO: 8.

In claim 13, line 2, the term “gene X” is vague and unclear (e.g. replacing it with the term – gene of interest—would be remedial).

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4-7 and 11-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are drawn to vectors comprising multiple promoters which work in an orchestrated manner to drive expression of a gene of interest. These promoters include any c-erbB2, GAPp-ptet, Egr-1, whey acidic protein, stromelysin 3, pProbasin, or prostate specific antigen promoter. The specification and claims do not adequately describe the broad genera comprising c-erbB2, GAPp-ptet, Egr-1, whey acidic protein, stromelysin 3, pProbasin, or prostate specific antigen promoters. The specification and claims do not indicate the concise features or attributes shared by each of these genera comprising functional c-erbB2, GAPp-ptet, Egr-1, whey acidic protein, stromelysin 3, pProbasin, or prostate specific antigen promoters which drive the expression of the vectors and corresponding components claimed. The scope of the claims

Art Unit: 1635

includes numerous structural variants for each of the genera comprising a particular promoter, and sequence variations exist within each promoter genus, depending on the species from which the promoters are obtained, and/or depending on the molecular source of the promoter obtained from a particular species (see the enclosed NCBI searches of the various promoters). The genera are highly variant because a significant number of structural differences between members of a given genus is permitted. The specification fails to teach or adequately describe a representative number of species in each genus. And because the genera are highly variant, the description provided is insufficient. One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the various genera claimed. Thus, Applicant was not in possession of the claimed genera.

Conclusion

Certain papers related to this application may be submitted to Art Unit 1635 by facsimile transmission. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 C.F.R. § 1.6(d)). The official fax telephone number for the Group is **703-872-9306**. NOTE: If Applicant *does* submit a paper by fax, the original signed copy should be retained by applicant or applicant's representative. **NO DUPLICATE COPIES SHOULD BE SUBMITTED** so as to avoid the processing of duplicate papers in the Office.


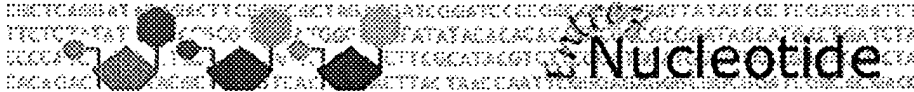

Art Unit: 1635

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jane Zara** whose telephone number is **(571) 272-0765**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John LeGuyader, can be reached on (571) 272-0760. Any inquiry regarding this application should be directed to the patent analyst, Katrina Turner, whose telephone number is (571) 272-0564. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JZ
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Search

All: 2




Entrez Nucleotide

Items 1 - 2

One page.

- ☐ 1: [Reports](#) [Links](#)
NM_019125
Rattus norvegicus probasin (Pbsn), mRNA
gi|9506846|ref|NM_019125.1|[9506846]
- ☐ 2: [Reports](#) [Links](#)
AY370611
Rattus norvegicus probasin (Pbsn) gene, promoter region and complete cds
gi|34420139|gb|AY370611.1|[34420139]

Related resources



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Search Nucleotide

Limits Preview/Index History Clipboard Details

Display Summary 20 Text

All: 18

Items 1 - 18

One page.

☐ 1: [Reports](#) [Links](#)
[NM_005940](#)

Homo sapiens matrix metalloproteinase 11 (stromelysin 3) (MMP11), mRNA
gi|58331147|ref|NM_005940.3|[58331147]

☐ 2: [Reports](#) [Links](#)
[NM_010927](#)

Mus musculus nitric oxide synthase 2, inducible, macrophage (Nos2), mRNA
gi|6754871|ref|NM_010927.1|[6754871]

☐ 3: [Reports](#) [Links](#)
[NM_005238](#)

Homo sapiens v-ets erythroblastosis virus E26 oncogene homolog 1 (avian) (ETS1), mRNA
gi|41393580|ref|NM_005238.2|[41393580]

☐ 4: [Reports](#) [Links](#)
[NM_021279](#)

Mus musculus wingless-related MMTV integration site 1 (Wnt1), mRNA
gi|47271537|ref|NM_021279.3|[47271537]

☐ 5: [Reports](#) [Links](#)
[NM_000602](#)

Homo sapiens serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1 (SERPINE1), mRNA
gi|10835158|ref|NM_000602.1|[10835158]

☐ 6: [Reports](#) [Links](#)
[NM_008606](#)

Mus musculus matrix metalloproteinase 11 (Mmp11), mRNA
gi|6678893|ref|NM_008606.1|[6678893]

☐ 7: [Reports](#) [Links](#)
[NM_021801](#)

Homo sapiens matrix metalloproteinase 26 (MMP26), mRNA

Entrez Nucleotide

Related resources

gi|13027810|ref|NM_021801.2|[13027810]

☐ **8:** Reports Links
NM_002422
Homo sapiens matrix metalloproteinase 3 (stromelysin 1, progelatinase) (MMP3), mRNA
gi|13027803|ref|NM_002422.2|[13027803]

☐ **9:** Reports Links
NM_002421
Homo sapiens matrix metalloproteinase 1 (interstitial collagenase) (MMP1), mRNA
gi|13027798|ref|NM_002421.2|[13027798]

☐ **10:** Reports Links
NM_021964
Homo sapiens zinc finger protein 148 (pHZ-52) (ZNF148), mRNA
gi|11415035|ref|NM_021964.1|[11415035]

☐ **11:** Reports Links
NC_005027
Pirellula sp. 1, complete genome
gi|32470666|ref|NC_005027.1|[32470666]

☐ **12:** Reports Links
CD268601
taa96d02.x1 Hydra EST -III Hydra magnipapillata cDNA 3' similar to TR:P97568 P97568 STROMELYSIN-3 PRECURSOR ;, MRNA sequence
gi|31056428|gb|CD268601.1|[31056428]

☐ **13:** X84664 Reports Links
H.sapiens stromelysin-3 gene
gi|984746|emb|X84664.1|HSSTROM3[984746]

☐ **14:** Reports
AR182516
Sequence 3 from patent US 6338944
gi|20225723|pat|US|6338944|3|gb|AR182516.1|[20225723]

☐ **15:** Reports Links
AF297645
Mus musculus stromelysin-3 (Mmp11) gene, promoter and partial cds
gi|10280608|gb|AF297645.1|AF297645[10280608]

☐ **16:** Reports
AR049980
Sequence 3 from patent US 5824794
gi|5971972|pat|US|5824794|3|gb|AR049980.1|AR049980[5971972]

☐ 17:AJ236885

Reports

Links

Homo sapiens mRNA for ZBP-89 protein

gi|4454256|emb|AJ236885.1|HSA236885[4454256]

☐ 18:AF019253

Reports

Links


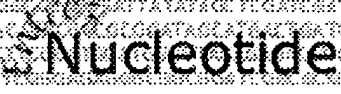

Xenopus laevis stromelysin-3 gene, promoter and partial cds

gi|2731771|gb|AF019253.1|AF019253[2731771]

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Display Summary 20 Text

All: 59

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Items 1 - 20

Page 1 of 3 Next

☐ 1: [Reports](#) [Links](#)
[NM_012620](#)

Rattus norvegicus serine (or cysteine) proteinase inhibitor, clade E, member 1 (Serpine1), mRNA
gi|6981331|ref|NM_012620.1|[6981331]

Related resources

☐ 2: [Reports](#) [Links](#)
[NM_212533](#)

Homo sapiens ATP-binding cassette, sub-family A (ABC1), member 2 (ABCA2), transcript variant 2, mRNA
gi|47078217|ref|NM_212533.1|[47078217]

☐ 3: [Reports](#) [Links](#)
[NM_001606](#)

Homo sapiens ATP-binding cassette, sub-family A (ABC1), member 2 (ABCA2), transcript variant 1, mRNA
gi|45446739|ref|NM_001606.3|[45446739]

☐ 4: [Reports](#) [Links](#)
[NM_138712](#)

Homo sapiens peroxisome proliferative activated receptor, gamma (PPARG), transcript variant 1, mRNA
gi|20336234|ref|NM_138712.1|[20336234]

☐ 5: [Reports](#) [Links](#)
[NM_138711](#)

Homo sapiens peroxisome proliferative activated receptor, gamma (PPARG), transcript variant 3, mRNA
gi|20336232|ref|NM_138711.1|[20336232]

☐ 6: [Reports](#) [Links](#)
[NM_005037](#)

Homo sapiens peroxisome proliferative activated receptor, gamma (PPARG), transcript variant 4, mRNA
gi|20336230|ref|NM_005037.3|[20336230]

- ☐ **7:** Reports Links
NM_015869
Homo sapiens peroxisome proliferative activated receptor, gamma (PPARG), transcript variant 2, mRNA
gi|20336228|ref|NM_015869.2|[20336228]
- ☐ **8:** Reports Links
NM_000639
Homo sapiens Fas ligand (TNF superfamily, member 6) (FASLG), mRNA
gi|4557328|ref|NM_000639.1|[4557328]
- ☐ **9:** Reports Links
NM_066294
Caenorhabditis elegans male ABnormal MAB-5, abnormal cell LINEage LIN-21, Homeobox C member, required for cell differentiation (22.4 kD) (mab-5) complete mRNA
gi|25144827|ref|NM_066294.2|[25144827]
- ☐ **10:** Reports Links
NM_000660
Homo sapiens transforming growth factor, beta 1 (Camurati-Engelmann disease) (TGFB1), mRNA
gi|56605974|ref|NM_000660.2|[56605974]
- ☐ **11:** Reports Links
NM_003376
Homo sapiens vascular endothelial growth factor (VEGF), mRNA
gi|30172563|ref|NM_003376.3|[30172563]
- ☐ **12:** Reports Links
AY842856
Mesocricetus auratus glucagon gene, promoter region
gi|56609040|gb|AY842856.1|[56609040]
- ☐ **13:** Reports Links
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Homo sapiens CD44 antigen (homing function and Indian blood group system) (CD44), transcript variant 5, mRNA
gi|48255942|ref|NM_001001392.1|[48255942]
- ☐ **14:** Reports Links
NM_001001391
Homo sapiens CD44 antigen (homing function and Indian blood group system) (CD44), transcript variant 4, mRNA
gi|48255940|ref|NM_001001391.1|[48255940]
- ☐ **15:** Reports Links
NM_001001390

Homo sapiens CD44 antigen (homing function and Indian blood group system) (CD44), transcript variant 3, mRNA
gi|48255938|ref|NM_001001390.1|[48255938]

☐ 16:[NM_001001389](#)[Reports](#)[Links](#)

Homo sapiens CD44 antigen (homing function and Indian blood group system) (CD44), transcript variant 2, mRNA
gi|48255936|ref|NM_001001389.1|[48255936]

☐ 17:[NM_000610](#)[Reports](#)[Links](#)

Homo sapiens CD44 antigen (homing function and Indian blood group system) (CD44), transcript variant 1, mRNA
gi|48255934|ref|NM_000610.3|[48255934]

☐ 18:[NM_058197](#)[Reports](#)[Links](#)

Homo sapiens cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4) (CDKN2A), transcript variant 3, mRNA
gi|47132607|ref|NM_058197.2|[47132607]

☐ 19:[NM_000077](#)[Reports](#)[Links](#)

Homo sapiens cyclin-dependent kinase inhibitor 2A (melanoma, p16, inhibits CDK4) (CDKN2A), transcript variant 1, mRNA
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☐ 20:[NM_058195](#)[Reports](#)[Links](#)

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Items 1 - 20




Page

1

of 3 Next

Display	Summary	▼	Show	20	▼	Send to	Text	▼
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All: 59 ✕

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Items 21 - 40

PreviousPage2of 3Next

☐ 21: Reports Links

[NM_005252](#)

Homo sapiens v-fos FBJ murine osteosarcoma viral oncogene homolog (FOS), mRNA
gi|6552332|ref|NM_005252.2|[6552332]

Related resources

☐ 22: Reports Links

[NM_002228](#)

Homo sapiens v-jun sarcoma virus 17 oncogene homolog (avian) (JUN), mRNA
gi|44890066|ref|NM_002228.3|[44890066]

☐ 23: Reports Links

[NM_002594](#)

Homo sapiens proprotein convertase subtilisin/kexin type 2 (PCSK2), mRNA
gi|20336243|ref|NM_002594.2|[20336243]

☐ 24: Reports Links

[NM_010427](#)

Mus musculus hepatocyte growth factor (Hgf), mRNA
gi|46048248|ref|NM_010427.2|[46048248]

☐ 25: Reports Links

[NM_198797](#)

Homo sapiens prostaglandin E synthase (PTGES), transcript variant 2, mRNA
gi|38505197|ref|NM_198797.1|[38505197]

☐ 26: Reports Links

[NM_004878](#)

Homo sapiens prostaglandin E synthase (PTGES), transcript variant 1, mRNA
gi|38505195|ref|NM_004878.3|[38505195]

- ☐ **27:** Reports Links
NM_000898
Homo sapiens monoamine oxidase B (MAOB), nuclear gene encoding mitochondrial protein, mRNA
gi|38202206|ref|NM_000898.3|[38202206]
- ☐ **28:** Reports Links
NM_010177
Mus musculus tumor necrosis factor (ligand) superfamily, member 6 (Tnfsf6), mRNA
gi|31981778|ref|NM_010177.2|[31981778]
- ☐ **29:** Reports Links
NM_007913
Mus musculus early growth response 1 (Egr1), mRNA
gi|24475900|ref|NM_007913.2|[24475900]
- ☐ **30:** Reports Links
NM_000602
Homo sapiens serine (or cysteine) proteinase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 1 (SERPINE1), mRNA
gi|10835158|ref|NM_000602.1|[10835158]
- ☐ **31:** Reports Links
NM_004864
Homo sapiens growth differentiation factor 15 (GDF15), mRNA
gi|4758935|ref|NM_004864.1|[4758935]
- ☐ **32:** Reports Links
NM_002930
Homo sapiens Ras-like without CAAX 2 (RIT2), mRNA
gi|4506532|ref|NM_002930.1|[4506532]
- ☐ **33:** Reports Links
NM_008145
Mus musculus gonadotropin releasing hormone 2 (Gnrh2), mRNA
gi|51093848|ref|NM_008145.1|[51093848]
- ☐ **34:** Reports Links
NM_001964
Homo sapiens early growth response 1 (EGR1), mRNA
gi|31317226|ref|NM_001964.2|[31317226]
- ☐ **35:** Reports Links
NM_013261
Homo sapiens peroxisome proliferative activated receptor, gamma, coactivator 1, alpha (PPARGC1A), mRNA
gi|29570796|ref|NM_013261.2|[29570796]

☐ 36:[NM_000576](#)

Reports

[Links](#)

Homo sapiens interleukin 1, beta (IL1B), mRNA
gi|27894305|ref|NM_000576.2|[27894305]

☐ 37:[NM_011949](#)

Reports

[Links](#)

Mus musculus mitogen activated protein kinase 1 (Mapk1), mRNA
gi|27370563|ref|NM_011949.2|[27370563]

☐ 38:[NM_010118](#)

Reports

[Links](#)

Mus musculus early growth response 2 (Egr2), mRNA
gi|23956051|ref|NM_010118.1|[23956051]

☐ 39:[NM_138957](#)

Reports

[Links](#)

Homo sapiens mitogen-activated protein kinase 1 (MAPK1), transcript
variant 2, mRNA
gi|20986530|ref|NM_138957.1|[20986530]

☐ 40:[NM_002745](#)

Reports

[Links](#)

Homo sapiens mitogen-activated protein kinase 1 (MAPK1), transcript
variant 1, mRNA
gi|20986528|ref|NM_002745.2|[20986528]



Items 21 - 40

Previous Page 2 of 3 Next

Display	Summary	<input type="checkbox"/>	Show	20	<input type="checkbox"/>	Send to	Text	<input type="checkbox"/>
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Display Summary 20 Text

All: 59

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Items 41 - 59

Previous 3 of 3

☐ **41:** Reports [Links](#)
[NM_053056](#)

Homo sapiens cyclin D1 (PRAD1: parathyroid adenomatosis 1) (CCND1), mRNA
gi|16950654|ref|NM_053056.1|[16950654]

Related resources

☐ **42:** Reports [Links](#)
[NM_033150](#)

Homo sapiens collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital) (COL2A1), transcript variant 2, mRNA
gi|15149478|ref|NM_033150.1|[15149478]

☐ **43:** Reports [Links](#)
[NM_001844](#)

Homo sapiens collagen, type II, alpha 1 (primary osteoarthritis, spondyloepiphyseal dysplasia, congenital) (COL2A1), transcript variant 1, mRNA
gi|15149477|ref|NM_001844.3|[15149477]

☐ **44:** Reports [Links](#)
[NM_024148](#)

Rattus norvegicus apurinic/apyrimidinic endonuclease 1 (Apex1), mRNA
gi|13162336|ref|NM_024148.1|[13162336]

☐ **45:** Reports [Links](#)
[NM_001275](#)

Homo sapiens chromogranin A (parathyroid secretory protein 1) (CHGA), mRNA
gi|10800418|ref|NM_001275.2|[10800418]

☐ **46:** Reports [Links](#)
[NM_013693](#)

Mus musculus tumor necrosis factor (Tnf), mRNA
gi|7305584|ref|NM_013693.1|[7305584]

- ☐ **47:**
NM_011146 Reports Links
Mus musculus peroxisome proliferator activated receptor gamma (Pparg), mRNA
gi|6755137|ref|NM_011146.1|[6755137]
- ☐ **48:**
AY630403 Reports Links
Mus musculus IL-2 receptor beta-chain gene, promoter region and 5'UTR
gi|49338206|gb|AY630403.1|[49338206]
- ☐ **49:**
AX814795 Reports Links
Sequence 1 from Patent WO03064465
gi|39103989|emb|AX814795.1||pat|WO|03064465|1|[39103989]
- ☐ **50:**
NC_003283 Reports Links
Caenorhabditis elegans chromosome V, complete sequence
gi|32967584|ref|NC_003283.3|[32967584]
- ☐ **51:**
AY142704 Reports Links
Gallus gallus transcription factor CEF-5 gene, complete cds
gi|23380434|gb|AY142704.1|[23380434]
- ☐ **52:**
AB083340 Reports Links
Mus musculus mPGES gene, promoter, partial sequence
gi|21327892|dbj|AB083340.1|[21327892]
- ☐ **53:**
AY029236 Reports Links
Homo sapiens protein tyrosine phosphatase 1B (PTP1B) gene, promoter and partial cds
gi|13919644|gb|AY029236.1|[13919644]
- ☐ **54:**
AX009737 Reports Links
Sequence 7 from Patent WO9960142
gi|9996934|emb|AX009737.1||pat|WO|9960142|7|[9996934]
- ☐ **55:**
AX009736 Reports Links
Sequence 6 from Patent WO9960142
gi|9996933|emb|AX009736.1||pat|WO|9960142|6|[9996933]
- ☐ **56:** X71791 Reports Links

Rattus norvegicus partial Gdn/Pn-1 gene for glia-derived nexin/protease
nexin I, enhancer region
gi|9968728|emb|X71791.2|RNGDNPN1[9968728]

☐ 57:[AJ245926](#)

Reports

[Links](#)

Homo sapiens Egr-1 gene for early growth response factor-1, promoter
region
gi|6688175|emb|AJ245926.1|HSA245926[6688175]

☐ 58:[U73595](#)

Reports

[Links](#)

Human prohormone convertase 2 (PC2) gene, exon 1 and partial cds
gi|2623384|gb|U73595.1|HSU73595[2623384]

☐ 59:[X12617](#)

Reports

[Links](#)

Mouse mgEgr-1 gene for mitogen inducible zinc finger protein 5'-flanking
region
gi|50809|emb|X12617.1|MMEGR1A[50809]

Items 41 - 59

[Previous](#)[Page](#)



3

of 3

Display	Summary	<input type="checkbox"/>	Show: 20	<input type="checkbox"/>	Send to	Text	<input type="checkbox"/>
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All: 16

Items 1 - 16One page.

☐ 1: [Reports](#) [Links](#)
[NM_133376](#)

Homo sapiens integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) (ITGB1), transcript variant 1E, mRNA
gi|19743822|ref|NM_133376.1|[19743822]

Related resources

☐ 2: [Reports](#) [Links](#)
[NM_033669](#)

Homo sapiens integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) (ITGB1), transcript variant 1C-2, mRNA
gi|19743820|ref|NM_033669.1|[19743820]

☐ 3: [Reports](#) [Links](#)
[NM_033668](#)

Homo sapiens integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) (ITGB1), transcript variant 1D, mRNA
gi|19743818|ref|NM_033668.1|[19743818]

☐ 4: [Reports](#) [Links](#)
[NM_033667](#)

Homo sapiens integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) (ITGB1), transcript variant 1C-1, mRNA
gi|19743816|ref|NM_033667.1|[19743816]

☐ 5: [Reports](#) [Links](#)
[NM_033666](#)

Homo sapiens integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) (ITGB1), transcript variant 1B, mRNA
gi|19743814|ref|NM_033666.1|[19743814]

- ☐ 6: [NM_002211](#) Reports Links
Homo sapiens integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12) (ITGB1), transcript variant 1A, mRNA
gi|19743812|ref|NM_002211.2|[19743812]
- ☐ 7: [NM_001005862](#) Reports Links
Homo sapiens v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian) (ERBB2), transcript variant 2, mRNA
gi|54792097|ref|NM_001005862.1|[54792097]
- ☐ 8: [NM_004448](#) Reports Links
Homo sapiens v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian) (ERBB2), transcript variant 1, mRNA
gi|54792095|ref|NM_004448.2|[54792095]
- ☐ 9: [NM_000546](#) Reports Links
Homo sapiens tumor protein p53 (Li-Fraumeni syndrome) (TP53), mRNA
gi|8400737|ref|NM_000546.2|[8400737]
- ☐ 10: [NM_002203](#) Reports Links
Homo sapiens integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor) (ITGA2), mRNA
gi|6006008|ref|NM_002203.2|[6006008]
- ☐ 11: [NM_002467](#) Reports Links
Homo sapiens v-myc myelocytomatosis viral oncogene homolog (avian) (MYC), mRNA
gi|31543215|ref|NM_002467.2|[31543215]
- ☐ 12: [NM_002012](#) Reports Links
Homo sapiens fragile histidine triad gene (FHIT), mRNA
gi|4503718|ref|NM_002012.1|[4503718]
- ☐ 13: [NM_010152](#) Reports Links
Mus musculus v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian) (ErbB2), transcript variant 2, mRNA
gi|54873611|ref|NM_010152.2|[54873611]

☐ 14:[NM_001003817](#)

Reports

[Links](#)

Mus musculus v-erb-b2 erythroblastic leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene homolog (avian) (ErbB2), transcript variant 1, mRNA

gi|54873609|ref|NM_001003817.1|[54873609]

☐ 15:[NM_053056](#)

Reports

[Links](#)

Homo sapiens cyclin D1 (PRAD1: parathyroid adenomatosis 1) (CCND1), mRNA

gi|16950654|ref|NM_053056.1|[16950654]


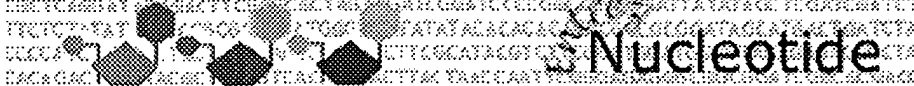

☐ 16:[X56495](#) Reports[Links](#)

H.sapiens DNA for the upstream regulatory region of the c-erbB2 gene

gi|29880|emb|X56495.1|HSCERBB2[29880]

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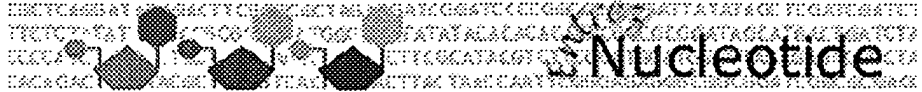

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20 Text

All: 12

Items 1 - 12

One page.

☐ 1: [AY312406](#) Reports [Links](#)

Rattus norvegicus whey acidic protein (WAP) gene, promoter region
gi|34766358|gb|AY312406.1|[34766358]

☐ 2: [NM_011709](#) Reports [Links](#)

Mus musculus whey acidic protein (Wap), mRNA
gi|42476276|ref|NM_011709.2|[42476276]

☐ 3: [Z92828](#) Reports [Links](#)

Caenorhabditis elegans cosmid C37A5, complete sequence
gi|2814139|emb|Z92828.1|CEC37A5[2814139]

☐ 4: [X79437](#) Reports [Links](#)

M.musculus whey acidic protein (WAP) gene, exon 1 (partial)
gi|495232|emb|X79437.1|MMWAPX1[495232]

☐ 5: [NC_003283](#) Reports [Links](#)

Caenorhabditis elegans chromosome V, complete sequence
gi|32967584|ref|NC_003283.3|[32967584]

☐ 6: [AJ409285](#) Reports [Links](#)

Camelus dromedarius partial gene for whey acidic protein, 5' flanking region
gi|17907600|emb|AJ409285.1|CDR409285[17907600]

☐ 7: [AR052653](#) Reports [Links](#)

Sequence 1 from patent US 5831141
gi|5976017|pat|US|5831141|1|gb|AR052653.1|AR052653[5976017]

☐ 8: [X01153](#) Reports [Links](#)

Rattus norvegicus WAP gene for whey acidic protein (exon 1 and joined
CDS)

gi|57492|emb|X01153.1|RNWAP1[57492]

☐ **9:** [AA408564](#) Reports [Links](#)

EST03045 Mouse 7.5 dpc embryo ectoplacental cone cDNA library Mus musculus cDNA clone C0030B08 3', MRNA sequence
gi|2067960|gb|AA408564.1|[2067960]

☐ **10:** [C79575](#) Reports [Links](#)

C79575 Mouse 3.5-dpc blastocyst cDNA Mus musculus cDNA clone J0068D10 3' similar to Mus musculus whey acidic protein (Wap) gene, promoter and, MRNA sequence
gi|2519905|dbj|C79575.1|[2519905]

☐ **11:** [U38816](#) Reports [Links](#)



Mus musculus whey acidic protein (Wap) gene, promoter and complete cds
gi|1215721|gb|U38816.1|MMU38816[1215721]

☐ **12:** [L21193](#) Reports [Links](#)

Mouse whey acidic protein gene, promoter region
gi|309534|gb|L21193.1|MUSWAPP[309534]

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All: 17

Items 1 - 17

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☐ 1: [Reports](#) [Links](#)
[NM_000044](#)

Homo sapiens androgen receptor (dihydrotestosterone receptor; testicular feminization; spinal and bulbar muscular atrophy; Kennedy disease) (AR), mRNA
gi|21322251|ref|NM_000044.2|[21322251]

Related resources

☐ 2: [Reports](#) [Links](#)
[NM_000313](#)

Homo sapiens protein S (alpha) (PROS1), mRNA
gi|4506116|ref|NM_000313.1|[4506116]

☐ 3: [Reports](#) [Links](#)
[NM_004064](#)

Homo sapiens cyclin-dependent kinase inhibitor 1B (p27, Kip1) (CDKN1B), mRNA
gi|17978497|ref|NM_004064.2|[17978497]

☐ 4: [Reports](#) [Links](#)
[NM_001099](#)

Homo sapiens acid phosphatase, prostate (ACPP), mRNA
gi|6382063|ref|NM_001099.2|[6382063]

☐ 5: [Reports](#) [Links](#)
[NM_012391](#)

Homo sapiens SAM pointed domain containing ets transcription factor (SPDEF), mRNA
gi|6912579|ref|NM_012391.1|[6912579]

☐ 6: [Reports](#) [Links](#)
[NM_145864](#)

Homo sapiens kallikrein 3, (prostate specific antigen) (KLK3), transcript variant 2, mRNA
gi|22208991|ref|NM_145864.1|[22208991]

- ☐ **7:**
NM_001648 Reports Links
Homo sapiens kallikrein 3, (prostate specific antigen) (KLK3), transcript variant 1, mRNA
gi|22208990|ref|NM_001648.2|[22208990]
- ☐ **8:**
NM_002415 Reports Links
Homo sapiens macrophage migration inhibitory factor (glycosylation-inhibiting factor) (MIF), mRNA
gi|4505184|ref|NM_002415.1|[4505184]
- ☐ **9:**
NT_011109 Reports Links
Homo sapiens chromosome 19 genomic contig
gi|29800594|ref|NT_011109.15|Hs19_11266[29800594]
- ☐ **10:**
AY283617 Reports Links
Homo sapiens KLK3 gene promoter region, partial sequence
gi|32879297|gb|AY283617.1|[32879297]
- ☐ **11:**
AY283616 Reports Links
Homo sapiens KLK3 gene promoter region, partial sequence
gi|32879296|gb|AY283616.1|[32879296]
- ☐ **12:**
AY283615 Reports Links
Homo sapiens KLK3 gene promoter region, partial sequence
gi|32879295|gb|AY283615.1|[32879295]
- ☐ **13:**
AY283614 Reports Links
Homo sapiens KLK3 gene promoter region, partial sequence
gi|32879294|gb|AY283614.1|[32879294]
- ☐ **14:**
AY283613 Reports Links
Homo sapiens KLK3 gene promoter region, partial sequence
gi|32879293|gb|AY283613.1|[32879293]
- ☐ **15:**
AY283612 Reports Links
Homo sapiens KLK3 gene promoter region, partial sequence
gi|32879292|gb|AY283612.1|[32879292]
- ☐ **16:** S81389 Reports Links
prostate-specific antigen/PCPSA {promoter} [human, prostate cancer patient]

isolate, Genomic, 620 nt]

gi|1336767|bbm|384056|bbs|176641|gb|S81389.1|S81389[1336767]

☐ 17: X92553 Reports

[Links](#)

H.sapiens aps gene promoter region

gi|1262808|emb|X92553.1|HSAPSPROM[1262808]

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